

Claims

1. A pressure sensor module comprising:
a base structure;
a cantilever member formed in the base structure by an isolation gap; and
a pressure sensing element located on the cantilever member, wherein the cantilever member provides stress isolation to the pressure sensing element.
2. The pressure sensor module as defined in claim 1, wherein the base structure comprises a first member connected to a second member, wherein the cantilever member is formed by providing the isolation gap between the first and second members.
3. The pressure sensor module as defined in claim 2, wherein the first member is adhered to the second member.
4. The pressure sensor module as defined in claim 2, wherein the first member comprises a sensor cell comprising electrical circuitry.
5. The pressure sensor module as defined in claim 2, wherein the second member comprises a substrate.
6. The pressure sensor module as defined in claim 1, wherein the base structure comprises a substrate and a housing, wherein the substrate is located on the housing and the cantilever member is formed by the isolation gap extending into the housing.
7. The pressure sensor module as defined in claim 6, wherein the housing comprises a ceramic material.

8. The pressure sensor module as defined in claim 7, wherein the ceramic material comprises low temperature co-fired ceramic.

9. A pressure sensor module comprising:
a base structure comprising a first member and a second member fixed to the first member;
a cantilever member formed in the base structure by an isolation gap; and
a sensing element located on the cantilever member, wherein the cantilever member provides stress isolation to the pressure sensing element.

10. The pressure sensor module as defined in claim 9, wherein the first member is adhered to the second member.

11. The pressure sensor module as defined in claim 9, wherein the first member comprises a sensor cell comprising electrical circuitry and connected to the second member, wherein the pressure sensing element is located on the sensor cell.

12. The pressure sensor module as defined in claim 9, wherein the base structure further comprises a housing connected to the second member.

13. The pressure sensor module as defined in claim 12, wherein the housing comprises a ceramic material having the isolation gap formed therein for forming the cantilever member.

14. The pressure sensor module as defined in claim 13, wherein the second member is adhered to the upper surface of the housing,

and the pressure sensing element is located on a sensor cell adhered to the upper surface of the second member.

15. A method of forming a stress isolated pressure sensor module comprising the steps of:

providing a base structure;

forming an isolation gap in the base structure to form a cantilever member; and

disposing a pressure sensing element on the cantilever member above the isolation gap so that the cantilever member provides stress isolation to the pressure sensing element.

16. The method as defined in claim 15, wherein the step of providing a base structure comprises forming a first member on top of a second member, wherein the pressure sensing element is disposed on the first member.

17. The method as defined in claim 16, wherein the first member is adhered to only a portion of the second member such that the isolation gap is formed between the first and second members and the first member forms the cantilever member.

18. The method as defined in claim 15, wherein the step of providing a base structure comprises forming a first member on top of a substrate, and further arranging the substrate on top of a housing, wherein the cantilever member is formed by forming the isolation gap in the housing.

19. The method as defined in claim 18, wherein the isolation gap is formed in a laminated ceramic material.

20. The method as defined in claim 19, wherein the ceramic material comprises low temperature co-fired ceramic.